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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/731,602	GYUGYI ET AL.
	Examiner	**Art Unit**	
	Emmanuel Maglo	2609	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 December 2003</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-28</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-28</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>09 December 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>2/19/2007</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAIL ACTION

Claim Rejections - 35 USC § 102

1.　　The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-21 are rejected under 35 U.S.C. 102(e) as being unpatentable over

Nishikado et al. **Pub # US 2003/0188013 A1**, herein and after referred to as Nishikado.

Consider claim 1, Nishikado relates to a method for realizing data communication

between a client apparatus and a server apparatus with use of a data communication

forwarding apparatus. Nishikado discloses the claimed invention where data

communication system is for using a delegated connection table, herein referred to as

connection management table (Figs. 3 and 4 element 16) comprising:

initializing an entry (element 20 in Figs. 3 and Fig. 4, the connection management table

16, [0085], with connection state corresponding to a connection selected by a TCP

stack for processing by an offload unit (as in [0011] where the connection management

processing unit monitors a connection state and manages the number of connections

currently established -as in Fig. 4- to a server apparatus or to group of server

apparatuses, Fig. 2 element 93 and as discussed in [0072] showing 93 as external or

peripheral unit, representing an offload unit);

updating the entry when a first frame is received for the connection ([0027] the priority

token generation/update processing unit generates priority token information under

certain conditions when failing to receive the priority token information from the client

apparatus; whereas, the priority token generation/update processing unit updates or

discards the priority token under certain conditions when receiving the priority token

information from the client apparatus);

reading the entry when a second frame is transmitted for the connection (as in [0074]

where the communication mechanism 94 is connected to a communication line 97

under control of an instruction from the information processing program 100 to transmit

data to another information processing device or communication device or conversely to

receive data from the other information processing device or communication device and

store it in the memory 92).

Consider claim 2, and as applied to claim 1 above, Nishikado teaches updating

the entry 20 when a second frame is transmitted. In server apparatus 2 when receiving

request 50, (see Fig. 17) element 1080 transmits response after execution of the

request trigging update of the entry 20 to some value associated with frame transmitted

to destination dst2 as shown in the connection management table 16, Fig. 4.

Consider claim 3, and as applied to claim 2 above, Nishikado teaches copying

portion of the second frame into a portion of the entry in the table by trigging the

privilege mapping processing unit 15, (Fig. 16), to set the process privilege depending

on the client address (Fig. 12), or the destination address (Fig. 13). As result, (Fig 16)

still, the request queuing processing unit 14 selects the entry 20 [0157], [0158],

extracted as a new selected entry.

Consider claim 4, and as applied to claim 1 above, Nishikado teaches uploading

payload data to a location specified in the entry within a memory space allocated to an

application program, in the way that requested entry 40 constituting the payload data of

the priority queues 30-1 to 30-n, as in Fig. 7, where priority queues may be located in a

memory 92, Fig. 2. The processing unit 91 executes an information processing program

100 stored in the memory 92. The memory 92 also stores, in addition to the information

processing program 100, various types of data to be referred to by the information

processing program.

Consider claims 5 and 6, and as applied to claim 1 above, Nishikado teaches

notifying the TCP stack when the first frame received is updated by the offloaded unit to

at least one of the legacy buffer in that [0073] the external storage mechanism 93 holds

the information processing program 100 and various sorts of data in a non-volatile form.

The information processing program 100 to be run on the processing unit 91 instructs

the external storage mechanism 93 to load a necessary programs or data into the

memory 92 or conversely to store the program or data on the memory 92 into the

external storage mechanism 93, a legacy buffer. Or the program may be previously

stored in the external storage mechanism 93. Or the program may be introduced as

necessary from an external device via a portable storage medium or a communication

medium.

Consider claim 7, and as applied to claim 1 above, Nishikado teaches the

claimed invention where another frame received does not correspond to another entry

in the delegated connection table. Since, [0074], the communication mechanism 94 is

connected to a communication line 97 under control of an instruction from the

information processing program 100 to transmit data to another information processing

device or communication device or conversely to receive data from the other

information processing device or communication device and store it in the memory 92.

Consider claim 8, and as applied to claim 6 above, Nishikado discloses the

claimed invention where a sequence number in the first frame does not correspond to a

sequence number stored in the delegated connection table. As it can be seen in Fig. 10,

another structure of the connection management table 16 is presented in addition to the

example of FIG. 4, showing an applicable privilege information field 201 and an internal

precedence information field 202 added to each entry 20; the later indicative of a

selection sequence between entries in the delegated connection table, so that [0148]

the request queuing processing unit 14 extracts the connection management table

entries 20 from the connection management table 16 sequentially one after another.

Accordingly, [0150] the request queuing processing unit 14 examines whether or not the

destination shown in the destination information 51 of the request is included in the

destination shown in the destination field 21 of the extracted entry 20.

Consider claim 9, as discussed immediately above, and as applied to claim 6

above, Nishikado teaches the claimed invention where a special case is detected in the

first package, when the request queuing processing unit 14 examines whether or not

the value of the application priority information field 201 of the entry 20 includes the

value of the process privilege 59 of the request. Accordingly a special case is

determined [0153] If the field value does not include the value of the request process

privilege 59, then it mean that it is not applicable and thus the processing unit 14 returns

to the process 1062.

Consider claim 10, and as applied to claim 9 above, see claim 6 above.

Consider claim 11, and as applied to claim 9 above, Nishikado discloses the

claimed invention where notifying an application program to complete processing of the

first frame by having, [0205], the data communication forwarding apparatus 3

terminates various operations of the processes 1014 to 1018 including disconnection to

terminate the processing of the request from the client apparatus 1 (process 1086), Fig.

17.

Consider claim 12, 13, and 14, and as applied to claim 9 above, Nishikado

discloses the claimed invention where uploading any subsequent frames received for

the connection, to one or more legacy buffers until resynchronization is signaled by the

TCP stack, where resynchronization is accomplished by observing ACK numbers

generated by the TCP stack, and where the ACK number is in a frame transmitted for

the connection, and is more advanced than a sequence number stored in the entry, and

is copied to the sequence number portion of the entry. Subsequent or next requests

[0148] and [0149] are processed by the request queuing processing unit 14, where the

unit extracts the connection management table entries 20 (comprising destination,

dstn1-dstN, shown in the destination field 21) from the connection management table 16

sequentially one after another (process 1062), then [0150] examines whether or not the

destination shown in the destination information 51 of the request is included in the

destination shown in the destination field 21 of the extracted entry 20 (process 1064).

The frame transmitted subsequent to processing unit 14 selection of 20 extracted in the

process 1062 as a new selected entry indicates that number in the destination

information 51 is more advance than the sequence number stored in the destination

field of entry 20 of the connection management table.

Consider claims 15 and 16, Nishikado discloses the claimed invention where

the mapping processing unit 15 [0166] is used to read a connection match portion of

the delegated connection table. This is done using the privilege mapping processing

unit 15 [0166] for using the address/process privilege conversion table 11 to find the

matching portion of the connection table. The benefit is to determine that the received

frame correspond to an entry in the connection match portion of the table where the

privilege mapping processing unit 15 finds an entry for which the user's authentication

information field 121 matches the user's authentication information 52 using the

user/process privilege conversion table 120, and finds the process privilege 59 using

the value of the process privilege field 122 of the same entry. Accordingly the data

received in the connection data portion in the table is parsed in the way that [0179]

removes the priority token information 53, [...], and transmits only a request containing

the information.

Consider claim 17, 18, and 19, and as applied to claim 15 above, Nishikado

discloses the claimed invention where reading a connection buffer portion of the

delegated connection table to obtain a user buffer information. The invention is

disclosed by generating [0201] the priority token information 53 as necessary in view of

the priority token interpretation processing unit 151 and under control of the priority

token control information 69 from the server apparatus 2 (process 1082), where

preferential processing service can be realized according to the attribute of the user

[007], and requesting user buffer 93 when the user buffer information indicates the user

buffer is not available to store payload data from privilege processing according to

user's attributes or the like.

Consider claims 20, and 21, and as applied to claim 18 above, Nishikado

teaches the claimed invention uploading the payload data to a legacy buffer as

discussed previously where preferential processing of a service request can be realized

according to the attribute of a user [007]. Nishikado again teaches the claimed invention

by determining that a receive buffer has reached a high water mark [0081] when the

maximum queuing number field 25 holds the maximum number of requests capable of

being queued for the destination of the management object, and the buffer request timer

has expired when the maximum wait time field 26 holds a maximum value of an

overtaking wait time overtaken by a priority request later arrived.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

3.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Nishikado et al. **Pub # US 2003/0188013 A1**, herein and after referred to as Nishikado,

in view of Craft et al. **Pub # US 20020091844 A1**, herein and after referred to as Craft.

Consider claims 22 and 23, Nishikado teaches the claimed invention except that

the storage unit 93, (Fig. 2), is not divided into the first, the second or the third storage

units configured to store respectively user buffer information, delegated connection

state information or delegated connection identification information, but where [0073]

the external storage mechanism 93 holds the information processing program 100 and

various data in a non-volatile form.

In the same field of endeavor, Craft discloses storage buffer 70 where data could be

stored according to user's attributes or the like. And, [0072] (Fig. 7), a first storage unit

462 is connected to first Ethernet-SCSI adapter 452 by a first SCSI cable 458. Similarly,

a second storage unit 464 is connected to second Ethernet-SCSI adapter 454 by a

second SCSI cable 459, and a third storage unit 466 is connected to second Ethernet-

SCSI adapter 456 by a third SCSI cable 460. Respective adapters 452, 454 and 456

according to SCSI standards operate the storage units 462, 464, and 466. Each storage

unit may contain multiple disk drives daisy chained to their respective adapter.

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use a receive sequencer 2105, including the data

synchronization buffer 2200, (Figs. 24 and 25), in connection with the receipt onto INIC

22 of the TCP/IP packets to match portion of the delegated connection associated with

data stored in various storages 70 where connection state information stored in the

connection data portion of said table is invoked by using buffer information to read

connection buffer of said table in order to avoid flushing a connection as connection

occurs, but to validate payload data by outputting, [0143], "data valid" signal upon

matching of delegated connection information. The matching will enable the packet

synchronization sequencer 2201 to instruct the data synchronization buffer 2200 to load

the received byte from data lines 2215, therefore avoiding data flushing.

Consider claims 24, 25 and 26, and as applied to claim 22 above, Nishikado

teaches the claimed invention except a command processing unit configured to write to

the first storage resource, or transmit engine configured to access the second storage

resource, or a receive engine configured to access the second storage resource.

In the same field of endeavor, Craft discloses storage buffer 70 where data could be

stored according to user's attributes or the like. And, [0072] (Fig. 7), a first storage unit

462 is connected to first Ethernet-SCSI adapter 452 by a first SCSI cable 458. Similarly,

a second storage unit 464 is connected to second Ethernet-SCSI adapter 454 by a

second SCSI cable 459, and a third storage unit 466 is connected to second Ethernet-

SCSI adapter 456 by a third SCSI cable 460. Respective adapters 452, 454 and 456

according to SCSI standards operate the storage units 462, 464, and 466. Each storage

unit may contain multiple disk drives daisy chained to their respective adapter.

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use the external storage mechanism to holds the information

processing program 100 and various data in a non-volatile form. The INIC storage unit

70, [0050] such as a disk drive or collection of disk drives and corresponding controller,

is coupled to the INIC bus 48 via a matching interface controller, INIC I/O controller 72,

which in turn is connected by a parallel data channel 75 to the INIC storage unit.

The motivation is that because control information for fast-path data does not travel

repeatedly over the host memory bus to be temporarily stored and then processed one

layer at a time by the host processor, the host may thus be liberated from involvement

with a vast majority of data traffic for file reads or writes on host-controlled storage.

Consider claims 27, and 28, and as applied to claim 26 above, Nishikado

teaches the claimed invention except a command processing unit configured to write to

the first storage resource, or transmit engine configured to access the second storage

resource, or a receive engine configured to access the second storage resource.

In the same field of endeavor, Craft discloses storage buffer 70 where data could be

stored according to user's attributes or the like. And, [0072] (Fig. 7), a first storage unit

462 is connected to first Ethernet-SCSI adapter 452 by a first SCSI cable 458. Similarly,

a second storage unit 464 is connected to second Ethernet-SCSI adapter 454 by a

second SCSI cable 459, and a third storage unit 466 is connected to second Ethernet-

SCSI adapter 456 by a third SCSI cable 460. Respective adapters 452, 454 and 456

according to SCSI standards operate the storage units 462, 464, and 466. Each storage

unit may contain multiple disk drives daisy chained to their respective adapter.

It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to configure the processor 480 via INIC 400 to read the first storage

462 and the third storage 466 used in the external storage mechanism to holds the

information processing program 100 and various data in a non-volatile form.

The motivation is that access to the first and the third storage via respective adapters 452

and 456 are likely to alleviate host processing as in [0074] where connection setup may in

this case be handled by adapter 452, for example, by INIC 400 sending an initial packet to

adapter 452 during a connection initialization dialog, with the packet processed by

sequencers 475 and then sent to processor 480 to create a CCB. Certain conditions that

require slow-path processing by a CPU running a software protocol stack are likely to be

even less frequent in this environment of communication between adapter 452 and INIC

400. The messages that are sent between adapter 452 and INIC 400 may be structured in

accordance with a single or restricted set of protocol layers, such as SCSI/TCP and

simple network management protocol (SNMP), and are sent to or from a single source to

a single or limited number of destinations. Reduction of many of the variables that cause

complications in conventional communications networks affords increased use of fast-path

processing, reducing the need at adapter 452 for error processing. Adapter 452 may have

the capability to process several types of storage protocols over IP and TCP, for the case

in which the adapter 452 may be connected to a host that uses one of those protocols for

network storage, instead of being connected to INIC 400. For the situation in which network 450 is not a SAN dedicated to storage transfers but also handles communication traffic, an INIC connected to a host having a CPU running a protocol stack for slow-path packets may be employed instead of adapter 452.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Maglo whose telephone number is (571)270-1854. The examiner can normally be reached on Monday - Friday 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Garber can be reached on (571)270-1202. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

E.M.